

GENERIC NAME:

DEXTROSE 50%

112.08

BRAND NAME: Dextrose 50%, D₅₀

CLASS: carbohydrate, hyperglycemic

Mechanism of Action:

Pharmacological: Aerobic metabolic substrate (ATP production).

Clinical effects: Reverses CNS effects of hypoglycemia by rapidly increasing serum glucose levels.

Provides short-term osmotic diuresis.

Indications and Field Use:

Known hypoglycemia

Altered level of consciousness of unknown etiology

Seizures of unknown etiology

Hyperkalemia

Contraindications:

Known thiamine deficiency (relative, if suspected give thiamine close to same time).

Delirium tremens; use with caution in patients with acute alcoholism, may be ineffective without thiamine.

Head injury (unless documented hypoglycemia).

Intra cranial hemorrhage (relative).

Severe pain (paradoxical excitement may occur).

Adverse Reactions:

Cerebral edema in children when given IV undiluted.

Worsening elevated ICP or cerebral edema from trauma or cerebral vascular accident.

Extravasation leads to severe tissue necrosis.

Sclerosing effect on peripheral veins.

NOTES ON ADMINISTRATION

Incompatibilities/Drug Interactions:

Sodium bicarbonate

Diazepam will precipitate if given concurrently without flushing

Adult Dosage:

Hypoglycemia, altered level of consciousness or seizures of unknown etiology: 25-100 ml of D₅₀ (12.5-50 Gm, ½ to 2 amps) IV.

Hyperkalemia: 50 Gm of Dextrose IV total may be given over 1 hour. This is a part of a combination drug therapy. See: profiles for calcium chloride and sodium bicarbonate. Insulin may be given upon arrival to ED.

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Pediatric Dosage: (14 yrs and below includes infant)

Administer 0.5 - 1 Gm/kg of a dextrose 10% solution; recommended to give slowly over a 20 minute period.

Dilute D₅₀ (dextrose 50% containing 25 Gm of dextrose) to a 1:4 solution. To prepare, obtain a 250 ml container of normal saline for IV use; waste 50 ml and add 50 ml of dextrose 50%. The resulting solution is dextrose 10% in normal saline or 10 Gm/ml.

Routes of Administration:

IV bolus (rapid)

Onset of Action:

Seconds

Peak Effects:

Variable

Duration of Action:

Variable

Dosage Forms/Packaging:

25 Gms/50 ml prefilled syringe

Arizona Drug Box Supply Range:

| | |
|---------------|--------------------------|
| PARAMEDIC: | 2 - 4 prefilled syringes |
| INTERMEDIATE: | 2 - 4 prefilled syringes |

Special Notes:

- > Determine a blood glucose level before initiating administration of dextrose. Inducing an unnecessary hyperosmolar state during certain illness/injury states (i.e. head injuries, cerebral edema, Intra cranial bleeds, etc.) may worsen neurological outcome. Additionally dextrose is very necrosing to the vascular system, will cause necrosis if infiltrated and should not be administered through small veins (all drugs may do harm, so does D₅₀).
- > Emergency treatment of hyperkalemia (clinical presentation, PMH and ECG changes) includes CaCl (or gluconate), sodium bicarbonate, and insulin and dextrose. Insulin may be given upon arrival to ED.